CW#131: Triangle Inequality Theorem

Geometry  
Due: Tuesday, May 23rd, 2016

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP:\_\_\_\_\_

Review:

Use the given information to identify the type of triangle shown in the diagram. Write the name of the triangle and then write a description of each triangle.

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Triangle Inequality Theorem Investigation:

Chart A shows the length of each colored straw. Each straw represents a potential side of a triangle. You will investigate which sets of straws can form triangles. Try to form a triangle by placing three straws together. In Chart B, write down the lengths of the straws with which you have tried to make a triangle, and whether or not a triangle was formed.

Chart A: Straw Colors and Sizes

|  |  |
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| **Color** | **Size (Inches)** |
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Pre-work: How will you know if a triangle is formed or not?

Chart B: Triangle Investigation

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| **Trial #** | **Size of Sides** | **Forms a Triangle?** | **Explain, why or why not?** |
| **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **4** |  |  |  |
| **5** |  |  |  |
| **6** |  |  |  |
| **7** |  |  |  |
| **8** |  |  |  |

Follow up:

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| 1. Create your own example where a triangle would not form. Explain why not. | 1. Create your own example where a triangle would form. Explain the difference. |
| 1. Predict: If two side lengths of a triangle are 3in. and 4in. 2. What is a possible length for the third side? Explain how you know. 3. What is an impossible length for the third side? Explain how you know. | |
| 1. Would the side lengths 4cm, 9cm, and 5cm. form a triangle? Why or why not? | |

Notes:

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| The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of any two sides of a triangle must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the  third side.  When given two sides of a triangle and asked to find the possibilities for the length of the third side, you express your answer as an inequality:  **Example:** Sides 3in and 4in.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ < x < \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Largest Side:**  **Smallest Side:** |
| Directions: State if the three side lengths given can form a triangle.  1. 4 cm, 9 cm, 2 cm 2. 6 in, 9 in, 4 in 3. 2 cm, 4 cm, 2 cm |
| Directions: Given the two side lengths, determine the lengths of a third side such that a triangle could be formed. [Write the inequality]  4. 5 m, 9 m 5. 2 in, 8 in 6. 3 cm, 12 cm |

Homework:

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| **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-22 at 7.39.32 PM.png** |
| **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-22 at 7.40.11 PM.png** |
| **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-22 at 7.40.35 PM.png** |
| **Sketch the triangle and…**  **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-22 at 7.42.13 PM.png** |
| **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-22 at 7.42.59 PM.png** |

Challenge: Answer in your notebook.

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Challenge: Answer in your notebook.

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Exit Ticket:

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| 1. Decide if the numbers below would form a triangle: 2. 5, 10, 12 3. 5, 10, 15 | 2. Write an inequality if two sides of a triangle are:  5in. and 12in. |

Exit Ticket:

|  |  |
| --- | --- |
| 1. Decide if the numbers below would form a triangle: 2. 5, 10, 12 3. 5, 10, 15 | 2. Write an inequality if two sides of a triangle are:  5in. and 12in. |

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